pears, however, that "the forests of Yezo are still intact, except where here and there a struggling settlement has broken into the forest blanket which covers this noble island. Here are great supplies of oak and ash of the best quality, of cercidiphyllum, walnut, fir, acanthopanax, cherry and birch—a storehouse of forest wealth, which, if properly managed, could be drawn upon for all time, and which, if the timber is not needed in Japan, may become, when the trans-Asiatic railroad is finished, an important factor in the development of southern Siberia and some of the treeless countries of central Asia."

THE BIRDS OF NEW GUINEA. (MISCELLANEOUS).

By G. S. Mead.

In considering the birds of the tropics or of any portion of the tropics, one is apt to suppose that the birds which are seen therein at any time may be seen at all times. In other words that they are as much fixtures as the trees, that they never migrate. While this may be true of a large number of species, it is not by any means true of every species, even of land birds.

Our own birds are with us a few months only; most of them at the approach of winter go south where, in tropical lands or in low temperate latitudes, they may be found during a longer period. The mere migrants—those that pause on their way north or south for days only—are not taken into account.

It is well then to bear in mind two facts: First, that in every country migratory birds whose period of stay covers a large proportion of the year, are to be met with besides permanent residents; second, that all birds found by travellers are not necessarily permanent residents, but in many instances transient vistors only.

Birds of Paradise are said to move from one island of the Papuan Archipelago to another, in order to avoid storms or stress of weather at certain times of the year. The Nicobar

pigeon also, a heavy flyer, has been seen many miles distant from the mainland.

Probably therefore, in New Guinea, although we find a very large resident population, we also discover many birds that have come from Australia or the Asian Continent to remain but a partial period. Mr. Jukes illustrates this view in his valuable narrative "The Voyage of the Fly."

"While we were in this neighborhood (in Torres Straits, Turtle-back Island) about the end of February, (1845), great flocks of the bee-eater which is common in Australia (*Merops ornatus*) were continually passing to the northward. The white pigeons also (*Caropophaga luctuosa*) were going in the same direction in numerous small flocks, and in March all the pigeons left in the islands were young ones. The bee-eaters go as far to the southward as Sydney during the summer of New South Wales, but we never saw the white pigeons much to the southward of Torres Straits. In September, 1844, they were coming thickly from the northward to Endeavour Strait, and they seem to return in March. What can be the reason of the migration? In these latitudes it is evident that mere temperature cannot be the cause of it, although the variation of the seasons for different fruits or insects may. I had afterwards strong reasons for suspecting, that even on the opposite sides of so small a space as Torres Strait, not more than 120 miles, the seasons are totally different; that the wet season prevails in New Guinea between March and October, which on the north of Australia is the driest part of the year; while from October to March, when most rain falls in Australia, it is probable that the south coast of New Guinea has its driest weather."—J. B. Jukes' Voyage of the Fly, Vol. I, p. 157.

Rich as the entire archipelago is in bird life, many as are the species peculiar to this or that island and found no where else, it would nevertheless be an unjust limitation to enumerate only such forms as are confined to the one region and cannot without the compulsion of some extraneous force pass beyond the barriers of their island home, to the total exclusion of the many additional species of birds that while they may not in all cases breed, yet linger for a longer or shorter period

in the places of their choosing. A large number of species of swallows, king-fishers, raptorial birds, range so widely as to make it impossible to say that they really belong to one island or group of islands rather than to another. In some instances, therefore, we find an interchange of habitat.

The pigeons form a very large chapter in the Natural History of New Guinea. They are many in number and species, (more than 80 are known) of all sizes and characteristics, and are found pretty generally throughout the vast island. Many of the kinds distributed in different quarters in Australia are to be seen in Papua, while several are peculiar to the latter and never found in Australia at all. Almost all phases of columbar development, therefore, may be studied in this region, which ornithologically speaking, is, as has been shown in divers instances, singularly favored. Foremost among the pigeons is the splendid *Goura coronata*, whose stately form is now not uncommon in zoological gardens. It is very large for a pigeon, as large oftentimes as the domestic turkey, very slow in its movements and quiet in its disposition. Its lovely dark blue plumage and the peculiar but beautiful crown, are its chief claims to renown among the many other wonders of its habitat, while its great size distinguishes it among its own kind. The crest is certainly very remarkable, imparting to its wearer a look that no other species of its tribe, indeed no other bird, possesses. It has the appearance of a bunch of long, delicate leaves from which all the pulpy matter has been removed. There appears to be rather individual than specific differences in the crests. The crest of *Goura victoriae* may be thicker towards the top, the thin feathers spreading out into little fans, but this appearance is not invariable. On the other hand *Goura albertisi* boasts a crest fully as large and tall, but the spatulas instead of flowering out as it were, remain of an even texture throughout their length. Yet in this case also, the distinction is not certain. A surer mark of difference between the two species is the white on the wings, this color being particularly noticeable in the *albertisi*.

A dark gray-blue is the dominating color; this becomes paler on the tail, and finally makes a bluish-white band. Whitish

marks appear on some of the feathers, while on the shoulders a fine maroon is visible and again on the under parts. The total length of the bird is fully two and a half feet.

Another species, *Goura sclaterii*, says D'Albertis "is like the crested Goura, but differs from it in having an ashen colored instead of an iron-gray black." Wallace mentions still another species, *Goura steursii* from Jobie, brought from there by the naturalist Rosenberg.

The genus *Eutrygon* of New Guinea is represented by a single species namely, *E. terrestris*. This pigeon is a handsome dark leaden-gray bird with a whitish spot on the forehead. The wings, tail, back and rump are a shining light olive, the sides and under tail coverts rufous. A white collar encircles the neck and throat; bill small and bony. The smallest of the genus *Ptilopus*, *Ptilopus nanus*, is clothed in bronzy-green, set off by a strip of gray on either side the neck, by a patch of purple in the very middle of the abdomen, and yellow touches on the wing coverts. Tail deep green; bright corn-yellow on under tail coverts. Female has no purple spot. The Tiny fruit pigeon it is called.

Another pretty little pigeon is *Ptilopus iozonus*, purple-banded; this dainty miniature of its family is about 8 inches in length. The general color is green, becoming black along the extremities of the long wings. The tail beneath is yellow, buff and white; legs yellow.

The *Chalcophaps margaritae* (*Philogoenas jobiensis*) or white-chested pigeon strikes one at first as being brown or bronze in color, but further observation will show a greater variety of tint. Moreover, as with almost all pigeons, the fundamental color is rich with its reflected lights. The tail is black intermixed with blue, the head black and gray, the neck, breast and throat white. Elsewhere violet, blue, even pink are reflected from the uniform metallic brown surface. This pigeon is small in size, timid and suspicious, and keeps to the ground, rarely perching upon trees.

A fine, large bird, nearly two feet in length, is *Macropygia reinwardtii*, widely distributed over the archipelago. The under parts including the neck and head are pure white or

ashy. Above, over the back, wings and two middle feathers of the long and shapely tail, the color is a warm chestnut. Black occurs also on the primaries, and in lines and edgings along some of the tail feathers, mixed with gray. The feet are red; around the eye runs a circlet of bare skin.

Otidiphaps nobilis, a ground pigeon, is rich in color. On the long feathers of the head a dark green lies; around the neck runs a collar of green rippling with light. A rich brown darkens the metallic surface of the back, while the wings are coffee colored. The curiously rounded tail is a dark blue-black and contains twenty feathers. The note of this bird is strenuous and persistent, lacking perhaps, the volume of certain species, but making up the deficiency by iteration and reiteration. The bill is like a small bone.

To D'Albertis we are indebted for a brief description of *Gymnophaps albertisii, novum genus et nova species.* "The form of their beaks, the nostrils surrounded by a circle of the brightest scarlet, and a large bare space around the eyes of the same brilliant color, give these birds a most curious appearance. The back is generally ash colored, speckled with black at the ends of the feathers."

Among pigeons, indeed among all the feathered folk, there are few more curious looking birds than the species *Caloenas nicobarica*, Nicobar pigeon, representing a genus by itself, scattered more or less abundantly throughout the Malayan Archipelago. It possesses considerable power of flight, although not an easy bird upon the wing, hence its general diffusion over the numberless islands of the Australasian seas. Mr. Guppy records its appearance in the Solomon Islands. The anomalous feature causing the peculiar appearance is the spread of long individualized feathers over the neck, shoulders and back. Thus is formed a kind of disparted mantle in which the lanceolate plumes seem to have been thrust after the subjacent layer was grown. The reflections from this singular covering are a blending of bronze and green. A still brighter reflection is turned from the metallic surface of the wings, a livelier green here meeting the eye. One notices with some surprise, as if it were an incongruous appearance, that the

terminations of the tail feathers are a pure white. Everywhere else we find a uniformity of bronzy coloring, intense indeed with reflections, but without contrasts.

Many of these pigeons, especially of the crowned species, are most delicious eating. The flesh surpasses in flavor, richness and other edible qualities that of almost all game birds. According to the taste of some travellers turkeys, ducks, geese, all must hang their heads in the presence of *Goura coronata*.

The *Talegallus* or Brush turkey is frequently seen in New Guinea, his mound being one of the characteristics features of the country. He is a small bird to accomplish such a task as gathering together in a compact mass, material—brush, dirt, leaves, etc.—in sufficient abundance to fill 20 or 30 large carts. No two travellers seem to make the same measurements. In this, which he treads down firm, the eggs are deposited and then left for the incubation the heat of decaying matter is sure to bring about. Several nests are placed in the same mound and do service for successive seasons. It is very much as if one of our barnyard fowls were transported into the depths of the forest, since the general aspect of the domestic hen and the wild bird is almost identical, and the cackling equally serious and obdurate.

The muscular effort necessary to the heaping up of the mounds must of course be very great; most of the work, if not all, is done by means of the foot, which is of large size and terminates a long, stout leg. While the bird stands on one foot, with the other he grasps the materials to be used and thrusts or kicks them back to the place he wishes. In this way the huge nest is gradually formed until it becomes a very respectable hillock in its dimensions, in some instances 20 to 30 feet through and 15 in height; all this is accomplished by birds (several combining together to perform the task) scarcely larger than a barnyard fowl. This Megapode (not using the term in its strict scientific limitation) is not addicted to flight nor are its wings of sufficient strength to keep it long in the air even were the bird disposed to entrust itself to that element Accordingly when disturbed, if it takes to its wings at all, it is with hurried and laborious strokes usually terminating at

some convenient bough not far away, where it stands with outstretched neck somewhat after the manner of our wild turkey, anxious as to the cause of alarm below. It is a shy timid bird, attentive to its own business solely, yet, like all such creatures, frequently carried away by curiosity.

Its enemies are many, for the flesh is sweet and the eggs nutritious. It would seem, therefore, as if for this defenseless, inoffensive creature, Nature would have provided some special protection. So indeed she has, since in the dusky hue, that blends readily with the forest surroundings, the *Talegallus* is furnished with the best possible protective coloring, but Nature oftentimes appears to delight in being capricious or inconsistent; she here gives an invisible cloak but as if to neutralize the gift, she bestows also a loud, dissonant voice that invites everything within hearing to come and see to what it belongs; and, as if this were not enough, the poor creature is obliged by hapless fate to call public attention to the depository in which its treasures are laid, by the vast size of the structure erected for their concealment.

The general color of the birds is a sober brown, unrelieved by any touch of brightness, unless it be in the pale yellow of the legs. The neck of one species is flushed with red, while in another a warm dark gray reaches as far as the abdomen. In some cases a delicate shading of browns produces a pleasing effect on the body and wings. The bill is dark, short and compact.

Four species are known, namely, *Talegallus lathamii* of Australia and New Guinea, *T. jobiensis*, *T. cuvierii* and *T. fusciros-tris*. D'Albertis calls the last *nova species*. It would seem as if some or all of these might be domesticated. The first mentioned is a large bird, in shape and size the counterpart of the female turkey, of a uniformly dark brown plumage and long neck denuded of a compact covering of feathers, but having instead a coarse dull-red skin scantily-clothed with short, stiff feathered shafts. The head presents a similar appearance. The tail is long and keel shaped, and like the wings dull of hue. There is a slight interfusion of gray on the under parts, imparting a mottled appearance to the thighs and abdomen.

Yellow brightens the wattles. The female is like her mate but somewhat smaller. The eggs are pure white, laid in a wide circle, and about $3\frac{1}{2}$ inches long.

Talegallus cuvierii is also a very dark brown with yellow legs and feet. It is not nearly so large a bird as the preceding and is better put together. While the larger bird looks not unlike a loosely set, shambling turkey, the smaller might pass for a trim, plump pullet. The sexes present no special differences. The color throughout is a sooty-brown excepting on the abdomen, which is mottled. The back and hinder parts are covered with a thick bed of the softest down, like the feathers a dark brown.

Talegallus fuscirostrii has been assigned a separate species of its own on account of its dark-colored bill.

T. jobiensis from the Island of Jobie is a variation probably differing but slightly from the species enumerated.

In *Dasyptilus pesquetii* we see a bird which must be classed among the parrots, yet one which possesses a curious resemblance in that most distinctive feature of the parrot family, viz., the head, to hawks and eagles; the eye also is small and fierce, and the beak that of a bird of prey. The feathers too, what feathers there are, for the head is almost bare except the occiput, stand out stiffly as at times of anger those on the head of the eagle. But in all other points the parrot is evident enough. The colors are strongly laid in, although few in number. Black of a greenish tinge covers most of the upper parts, from which the red of the wings stands out vividly; a similar tint scarcely less brilliant appears on the thighs, abdomen and rump; a grayish hue is apparent on the breast, combined with pale yellow, giving a peculiar cast to that part of the body. In length, taking in the somewhat long tail, this anomalous member of his tribe, is about twenty inches.

If the parrot just described is something of a nondescript, the Black Cockatoo, *Aterrimus*, is exceptional because of his great size, for he is the largest of his family. He is also the only member of the genus *Microglossus*. He is to be found pretty generally throughout the archipelago and is always in evidence because of his size, color and eccentricity of looks and

conduct. He measures sometimes 32 inches and is entirely black from his absurd head, which is finely crested, to the long, rounded tail. The only relief to this funereal garb is the bright red of the bare cheeks. The bill is extremely powerful and is used with as much dexterity by its proud possessor as if it were not the most awkward looking thing in the world.

A splendid species of the Gardener, splendid by reason of its crest, for in other features it resembles the *Inornata*, is *Amblyornis subalaris* found in the Astrolabe and Horseshoe Mountains, Southeast New Guinea. One noteworthy fact should not be omitted; its cabin boasts of two entrances, for what special purpose, if any, is a matter of surmise. There is considerable olivaceous on the body of this species and bright, fine stripes on the throat. The beautiful erectile fire-orange crest, tall and spreading, grows dark of hue near the crown, and is also shaded here and there along the sides. The bill lacks the size of the other species. The total length of the bird is only about eight inches. The female is like the male with the exception of the crest. She is without this distinguishing ornament, but the uniform dark brown of the back and the mottled brown-yellow below are the same.

The bower of this species is said to surpass that of any other bird in ingenuity and quaintness. The same general design as we have seen in the case of the *Inornata* is followed by the *Subalaris*. Around a central post or tree-stem the construction is reared; at its foot is a bank of moss into which is thrust flower or twig or other ornament. The running or chasing ring encircles the bank, and over all there is erected a sort of roof probably as a shelter and concealment. Surely instinct or sagacity has not further gone than in this little pleasure house built as it were after a plan, out of material as serviceable and durable as the special purposes required. Easily removable, they are at the same time fitted in the entire work so artistically as to give the appearance of solidity to the fabric.

Ten years ago there was discovered in the Horseshoe Mountains, Eastern New Guinea, a fine Paradise bird, regarded as a new species of a new genus and so classified by the distin-

guished German naturalists Drs. Finsch and Meyer, whose personal knowledge of the great island and its feathered population is so widely appreciated. They named the acquisition *Astrarchia stephaniae* after the Crown Princess of Austria. It is like the brilliant *Astrapia nigra* but differs in some particulars so important, especially in the form of the tail, as to justify its relegation to a genus of its own. The general color is black with violet, green, bronze and blue reflections. There are two, if not three bands, athwart the breast, the one glinting out all the reflections, the other just below, less broad, glowing with a coppery refulgence, while a third so evanescent as to scarcely admit of specification, is of a bluish shade. The under parts do not fail from their dark surfaces to send forth gleams of changing colors—green, golden and brown. The tail is black also, upper and under tail coverts blue-black. From the side of the head proceed velvety-black, shining feathers somewhat lengthened; so too are the loose feathers on the neck. The metallic wings—black and glistening—are of a violet-purplish cast. The bill, feet and irides are black. As in the *Astrapia* the exterior upper tail feathers are curved back at their ends and are of a roseate dye, perceptible but elusive. But it is not in the tints but in the arched shape of the tail feathers, that one essential difference between the *Astrapia nigra*—the Paradise Pie—and *Astrarchia* lies. In the first "the tail is regularly graduated," in the second "the graduation is irregular." Again the head of the latter is less profusely plumaged, nor are the feathers of adornment as long as in the allied genus. On the neck the plumes of *Astrarchia* are not free and upturned, but laid close upon the underlying feathers.